IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application No. 10/772,490	For:	SYSTEM AND METHOD FOR GENERATING SIGNAL WAVEFORMS IN A CDMA CELLULAR TELEPHONE SYSTEM
GILHOUSEN et al.		
Filed: February 5, 2004	Group No.	2631

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR § 1.97(b)

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Assistant Commissioner:

Applicants, through their attorney, submit herewith references of which they are aware, which they believe may be material to the examination of this application and with respect to which there may be a duty to disclose in accordance with 37 CFR § 1.56.

CERTIFICATE OF MAILING/TRANSMISSION (37 CFR 1.8(a))

I hereby certify that this correspondence is, on the date shown below, being:

MAILING

☒ deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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(type or print name)

Date: June 21, 2004

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Some of these documents have been previously submitted in U.S. application serial number 09/360,059, filed on July 23, 1999, now issued U.S. patent no. 6,693,951, issued on February 17, 2004;" U.S. patent no. 5,943,361, issued on August 24, 1999;" U.S. patent no. 5,416,797, issued on May 16, 1995;" and U.S. patent no. 5,103,459, issued on April 7, 1992; all of which are entitled, "System and Method for Generating Signal Waveforms in a CDMA Cellular Telephone System" and are currently assigned to the assignee of the present application.

At least one of the enclosed references is not in the English language. The following is an explanation of the relevance of non-English references for which an English translation is not available.

European patent application no. 0036605A1 describes a PCM system with scrambler for binary signals using one pseudo-random sequence to reduce the number of components and transit time. The cryptographic encoder (SC) scrambles several binary signals (BS1-BS4) in parallel and passes them to a multiplexer (MUX) for combining. The encoder consists of a shift register with feedback via a module 2 adder. The same pseudo-random sequence of different flip-flops within the shift register is used for encoding, i.e. pseudo-random sequences displaced in time. A synchronization sequence is sent by resetting the register and encoding continuous places.

The German-language document, Bobwetter, *"Die Erzeugung von Walsh-Funktionen,"* NTZ Heft 4, 1970, describes a Walsh function generation scheme. No application to spread spectrum communication systems appears to be evident from the drawings.

While the references identified herein may be material to the examination of this application pursuant to 37 CFR § 1.56, the citation of these references is not intended to constitute an admission that any reference referred to herein is prior art to the invention of this application unless specifically designated as such.

The filing of this document shall not be construed to mean that any search has been made or, that if made such search was complete or exhaustive, or that no other material information as defined in 37 CFR § 1.56 exists.

A list of the references cited herein is set forth on Form PTO-1449 which is enclosed herewith. In accordance with 37 CFR § 1.98(d) Applicants are not required to submit copies of the references and accordingly have not provided copies herewith. Applicants respectfully

request that the Examiner return to Applicants the enclosed copy of the Form PTO-1449 indicating consideration of the references.

The subject application is believed patentable over any of the above-references.

Respectfully submitted,

Dated: 6/21/2004

By: ACC

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FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE (REV. 7-80) PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(Use several sheets if necessary)* DATE MAILED: June 21, 2004	ATTY. DOCKET NO. PA024C1C2C1D2	APPLICATION NO. 10/772,490
	APPLICANT GILHOUSEN et al.	
	FILING DATE February 5, 2004	GROUP 2631

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	Ref No	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	A1	5,005,169	4/2/1991	Bronder et al.			
	A2	4,730,340	3/8/88	William Frazier, Jr.			
	A3	4,052,565	10/4/77	Baxter et al.			
	A4	4,933,952	6/12/90	Albrieux et al.			
	A5	3,715,508	2/6/73	Blasbalg			
	A6	4,301,530	11/17/81	Gutleber			
	A7	4,460,992	7/17/84	Gutleber			
	A8	4,472,815	9/18/84	Gutleber			
	A9	4,872,200	10/3/89	Jansen			
	A10	4,939,745	7/3/90	Kirimoto et al.			
	A11	5,103,459	4/7/92	Gilhousen et al.			
	A12	5,416,797	5/16/95	Gilhousen et al.			
	A13	5,943,361	08/24/99	Gilhousen et al.			
	A14	4,630,283	12/16/86	Schiff			
	A15	4,922,506	5/1/90	McCallister et al.			
	A16	4,841,545	6/20/89	Endo et al.			
	A17	4,635,221	1/6/87	Kerr			
	A18	4,765,753	08/23/88	Schmidt			
	A19	5,005,169	4/2/91	Bronder et al.			
	A20	5,715,236	2/3/98	Gilhousen et al.			
	A21	5,841,806	11/24/98	Gilhousen et al.			
	A22	5,309,474	5/3/94	Gilhousen et al.			
	A23	5,099,495	3/24/92	Mikoshiba et al.			
	A24	5,136,612	8/4/92	Bi			
	A25	5,291,515	3/1/94	Uchida et al.			
	A26	5,677,929	10/14/97	Asano et al.			
	A27	5,960,032	09/28/99	Letaief et al.			
	A28	5,471,497	11/28/95	Zehavi			
	A29	5,467,367	11/14/95	Izumi et al.			

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	A30	5,343,495	8/30/94	Lovell et al.			
	A31	5,274,665	12/28/93	Schilling			
	A32	3,310,631	03/21/67	Brown			
	A33	3,660,608	05/2/72	Moose Jr. et al.			
	A34	3,715,508	02/06/73	Blasbalg			
	A35	3,795,864	03/05/74	Fullton Jr.			
	A36	3,959,726	05/25/76	Hinoshita, et al.			
	A37	4,002,991	01/11/77	Ogita			
	A38	4,017,798	04/12/77	Gordy, et al.			
	A39	4,020,461	04/26/77	Adams, et al.			
	A40	4,048,563	09/13/77	Osborne			
	A41	4,092,601	05/30/78	Lee, et al.			
	A42	4,100,376	07/11/78	Woythaler			
	A43	4,121,159	10/17/78	Lampert			
	A44	4,152,651	05/01/79	Lampert, et al.			
	A45	4,164,628	08/14/79	Ward, et al.			
	A46	4,179,658	12/18/79	Bitzer			
	A47	4,188,580	02/12/80	Nicolai, et al.			
	A48	4,189,677	02/19/80	Cooper, et al.			
	A49	4,193,031	03/11/80	Cooper			
	A50	4,203,070	05/13/80	Bowles, et al.			
	A51	4,203,071	05/13/80	Bowles, et al.			
	A52	4,217,586	08/12/80	McGuffin			
	A53	4,222,115	09/09/80	Cooper, et al.			
	A54	4,231,113	10/28/80	Blasbalg			
	A55	4,247,939	01/27/81	Stremswold, et al.			
	A56	4,276,646	06/30/81	Haggard, et al.			
	A57	4,291,409	09/22/81	Weinberg, et al.			
	A58	4,291,410	09/22/81	Caples, et al.			
	A59	4,301,530	11/17/81	Gutleber			
	A60	4,308,617	12/29/81	German, Jr.			

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	A61	4,309,769	01/05/82	Taylor, Jr.			
	A62	4,313,211	01/26/82	Leland			
	A63	4,361,890	11/30/82	Green, Jr., et al.			
	A64	4,361,891	11/30/82	Lobenstein, et al.			
	A65	4,365,327	12/21/82	Pirani			
	A66	4,394,760	07/19/83	Kammerlander			
	A67	4,447,907	05/8/84	Bjornholt et al.			
	A68	4,460,992	07/17/84	Gutleber			
	A69	4,472,815	09/18/84	Gutleber			
	A70	4,484,335	11/20/84	Mosley, et al.			
	A71	4,501,002	02/19/85	Auchterlonie			
	A72	4,532,635	07/30/85	Mangulis			
	A73	4,551,853	11/05/85	Deman, et al.			
	A74	4,559,633	12/17/85	Kan, et al.			
	A75	4,561,089	12/24/85	Rouse, et al.			
	A76	4,567,588	01/28/86	Jerrim			
	A77	4,601,047	07/15/86	Horwitz, et al.			
	A78	4,621,365	11/04/86	Chiu			
	A79	4,512,024	4/16/85	Gutleber			
	A80	5,341,423	08/23/94	Nossen			
	A81	4,649,549	03/10/87	Halpern, et al.			
	A82	4,665,514	05/12/87	Ching, et al.			
	A83	4,672,658	06/09/87	Kavehrad, et al.			
	A84	4,688,035	08/18/87	Gray, et al.			
	A85	4,703,474	10/27/87	Foschini, et al.			
	A86	4,730,340	03/8/88	Frazier, Jr.			
	A87	4,754,450	06/28/88	Lynk, Jr., et al.			
	A88	4,785,463	11/15/88	Janc, et al.			
	A89	4,809,295	02/28/89	Zscheile, Jr., et al.			
	A90	4,813,040	03/14/89	Futato			
	A91	4,843,612	06/27/89	Brusch, et al.			

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	A92	4,872,200	10/03/89	Jansen			
	A93	4,882,579	11/21/89	Siwiak			
	A94	4,894,842	01/16/90	Broekhoven, et al.			
	A95	4,901,307	02/13/90	Gilhousen et al.			
	A96	4,933,952	06/12/90	Albrieux et al.			
	A97	4,939,745	07/03/90	Kirimoto, et al.			
	A98	4,941,150	07/10/90	Iwasaki			
	A99	4,942,591	07/17/90	Nease, et al.			
	A100	4,943,976	7/24/90	Ishigaki			
	A101	4,953,178	08/28/90	Ishigaki			
	A102	4,958,359	09/18/90	Kato			
	A103	4,962,507	10/09/90	Renshaw			
	A104	4,969,159	11/06/90	Belcher et al.			
	A105	5,001,723	03/19/91	Kerr			
	A106	5,003,533	03/26/91	Watanabe			
	A107	5,022,046	06/04/91	Morrow, Jr.			
	A108	5,056,109	10/08/91	Gilhousen, et al.			
	A109	5,068,849	11/26/91	Tanaka			
	A110	5,101,501	03/31/92	Gilhousen, et al.			
	A111	4,872,200	10/03/89	Jansen			
	A112	5,109,390	04/28/92	Gilhousen, et al.			
	A113	5,136,586	08/04/92	Greenblatt			
	A114	5,177,767	01/05/93	Kato			
	A115	5,199,045	03/30/93	Kato			
	A116	5,212,684	05/18/93	MacNamee, et al.			
	A117	5,260,969	11/09/93	Kato, et al.			
	A118	5,274,836	12/28/93	Lux			

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FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	Ref No	DOCUMENT NUMBER	DATE	COUNTRY	NAME	CLASS	SUB CLASS
	B1	0 036 605 A1	9/30/81	EP	Siemens Aktiengesellschaft		
	B2	0 111 937 A2	6/27/84	EP	NEC Corporation		
	B3	0 264 784 A2	4/27/88	EP	NEC Corporation		
	B4	0 412 583 A2	2/13/91	EP	Motorola, Inc.		
	B5	0 418 865 A2	3/27/91	EP	Nippon Telegraph and Telephone Corporation		
	B6	0 444 592 A2	9/4/91	EP	NEC Corporation		
	B7	91/07030	5/10/91	WO	Motorola, Inc.		
	B8	2 022 365 A	12/12/79	UK	Texas Instruments Incorporated		
	B9	2 125 654 A	3/7/84	UK	Hazeltine Corporation		
	B10	2 182 528 A	5/13/87	UK	Racal Data Communications Inc.		

OTHER PRIOR ART (*Including Author, Title, Date, Pertinent Page, Etc.*)

	C1		Erwin Kreyszig, "ADVANCED ENGINEERING MATHEMATICS," John Wily & Sons 1979; Section 4.7, pages 186-190.
	C2		Henning F. Harmuth, "Transmission of Information by Orthogonal Functions," Springer-Verlag New York Inc. 1969, pgs. 73-81.
	C3		Nirode C. Mohanty, "Spread Spectrum and Time Division Multiple Access Satellite Communications," IEEE Transaction on Communication, Vol. Com. 25, No. 8, August 1977, pgs. 810-815.
	C4		Jack K. Holmes, "Coherent Spread Spectrum Systems," John Wiley & Sons, pgs. 369-371.
	C5		Rudolf F. Graf, "Modern Dictionary of Electronics," Howard W. Sams & Co., Inc., Sixth Edition, Second Printing, 1984, pgs. 749 and 1108.
	C6		William C.Y. Lee, "Mobile Cellular Telecommunications Systems," McGraw-Hill Book Company, 1989, pg. 249.

CUSTOMER NO. 23696

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	C7		Golay, "An Approach to Multiple Access Satellite Communications Through the Use of Net Synchronized Orthogonal Signals," Institute for Defense Analyses Research and Engineering Support Division, Report R 108, Vol. 2, April 1965.
	C8		Besslich, "Sequential Circuits and Walsh Functions," NZT, Communication from the Dept. of Electrical Eng., Indian Institute of Technology, Madras, India, 1974, pages 154-157.
	C9		Bobwetter, "Die Erzeugung von Walsh-Funktionen," NTZ Heft 4, 1970, pages 201-207.
	C10		Chase, et al., Spread Spectrum Multiple Access Performance of Orthogonal Codes in Fading Multipath Channels," Worcester Polytechnic Institute, Worcester, MA, IEEE Military Communications Conference, Conference Record Vol. 1 of 3, 1988.
	C11		J.M. Aein et al., "Multiple Access to a Communications Satellite with a Hard-Limiting Repeater," IDA, Vol. II, April 1965, pages 107-114.
	C12		Cooper, et al., "A Spread-Spectrum Technique for High-Capacity Mobile Communications," Record of the IEEE Transactions of Vehicular Technology, Vol. VT-27, No. 4, 1977, pages 98-103.
	C13		Cooper, et al., "Cellular Land-Mobile Radio: Why Spread Spectrum?" IEEE Communications Magazine, March 1979, pages 17-24.
	C14		Cooper, et al., "Cellular Mobile Technology: The Great Multiplier," IEEE Spectrum Advanced Technology, Exhibit No. 14, June 1983, pages 30-37.
	C15		Das, "A Technique for Improving the Efficiency of M-ary Signaling," IEEE Transactions on Communications, Vol. COM-32, No. 2, February 1984.
	C16		Enge, et al., "Spread-Spectrum Multiple-Access Performance of Orthogonal Codes: Linear Receivers," IEEE Transactions on Communications, Vol. COM-35, No. 12, December 1987.
	C17		Golomb, et al., "Shift Register Cycles of All Lengths," Holden-Day, Inc., University of Southern California, 1967, pages 192-197
	C18		Alavi, "Power Control and Interference Management in a Spread-Spectrum Cellular Mobile Radio System," UMI Dissertation Information Service, 1984.
	C19		Kreyszig, "Orthogonal Sets of Functions," Advanced Engineering Mathematics, John Wiley & Sons, Inc., 1979.
	C20		Lebert, "Walsh Function Generator for a Million Different Functions," Dept. of Electrical Eng., University of Maryland, 1970, pages 52-54.
	C21		Lee, "Digital Generation of Walsh-Functions for Orthogonal Multiplexing Applications," Applicants of Walsh Functions, Dept. of Electrical Eng., The Catholic University of America, Washington, D.C. and Consultant, U.S. Naval Research Lab., Washington, D.C., pages 222-227.

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	C22		Lee, et al., "On Interference Suppression Using Complementary Filters in DS-SSS," IEEE, Vol. 2, 1989, pages 486-490.
	C23		Nettleton, "Spectral Efficiency in Cellular Land-Mobile Communications: A Spread-Spectrum Approach," U-M-I Dissertation Information Service, UMI Dissertation Information Service, 1978.
	C24		H.H. Nick, "Binary Logic Walsh Function Generator," IBM Technical Disclosure Bulletin, Vol. 22 No. 10, March 1980, pages 4650-4651.
	C25		Roddam, "Walsh Functions," Generation and Application, 3 pages.
	C26		Scarbata, "Walshfunktionen-Generator," Radio Fernsehen Elektronik, 1973, pages 470-474.
	C27		Scarbata, et al., "Realisierung von Walsh-Funktionsgeneratoren mit TTL-und MOS-Schaltungen," Radio Fernsehen Elektronik, 1978, pages 117-119.
	C28		Scarbata, et al., "Walsh-Funktionen und ihre Erzeugung," Nachrichtentechnik Elektronik, 1976, pages 111-116.
	C29		Simon, et al., "Spread Spectrum Communications," Vol. 1 Computer Science Press, Inc. 1, 1985, pages 98-104.
	C30		Viterbi, et al., "Nonlinear Estimation of PSK-Modulated Carrier Phase with Application to Burst Digital Transmission," IEEE Transactions on Information Theory, Vol. IT-29, No. 4, July 1983, pages 543-551.
	C31		E. Rechtin, "An Annotated History of Codorac: 1953:1958," Jet Propulsion Laboratory, Report No. 20-120, August 4, 1958, pages 1-22.
	C32		Leonard R. Kahn, "Ratio Squarer,"I-R-E," November 1954, pages 1704.
	C33		Proakis, J.. Digital Communications. New York: McGraw-Hill Book Company, p. 804. 1989.
	C34		Cooper, G.R. and McGillem. C.D. Modern Communications and Spread Spectrum. New York: McGraw-Hill Book Company, p. 273. 1986.
	C35		Blasbalg, "A Comparison of Pseudo-Noise and Conventional Modulation for Multiple-Access Satellite Communications". IBM Journal of Research and Development, vol. 9, No. 4, Jul. 1965
	C36		H.F. Harmuth, Transmission of Information by Orthogonal Functions. New York: Springer-Verlag. 1969. Pp. 73-81, 1969.
	C37		N.C. Mohanty. "Spread Spectrum and Time Division Multiple Access Satellite Communications," IEEE Transactions on Communications, vol. COM-25, No. 8, pp. 810-815, Aug. 1977.
	C38		J.K. Holmes, Coherent Spread Spectrum Systems. New York: John Wiley & Sons, pp. 346-347 and 368-373, 1982.

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	C39		R.F. Graf, Modern Dictionary of Electronics. Indianapolis: Howard W. Sams and Co., Inc., pp. 749 and 1108, 1984.
	C40		W.C.Y. Lee, Mobile Cellular Telecommunications Systems. New York: McGraw-Hill Book Company, pp. 248-249, 1989.
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EXAMINER	DATE CONSIDERED

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.